

### In the Claims

This listing of claims will replace all prior versions and listings of claims in the application:

1           1.   (Previously Presented) A method of time scale  
2 modification of a digital audio signal comprising the steps of:  
3           analyzing an input signal in a set of first equally spaced,  
4 overlapping time windows having a first overlap amount  $S_s$ ;  
5           selecting a base overlap  $S_s$  for output synthesis corresponding  
6 to a desired time scale modification;  
7           calculating a cross-correlation  $R[k]$  for index value  $k$  between  
8 overlapping frames for a range of overlaps between  $S_s + k_{min}$  to  
9  $S_s + k_{max}$  for only a fixed length overlap region less than an entire  
10 overlapping region;  
11          selecting a value  $K$  yielding the greatest cross-correlation  
12 value  $R[k]$ ;  
13          synthesizing an output signal in a set of second equally  
14 spaced, overlapping time windows having a second overlap amount  
15 equal to  $S_s + K$ .

1           2.   (Currently Amended) ~~The A method of claim 1, wherein time~~  
2 scale modification of a digital audio signal comprising the steps  
3 of:  
4           analyzing an input signal in a set of first equally spaced,  
5 overlapping time windows having a first overlap amount  $S_s$ ;  
6           selecting a base overlap  $S_s$  for output synthesis corresponding  
7 to a desired time scale modification;  
8           ~~said step of~~ calculating the cross-correlation  $R[k]$  for index  
9 value  $k$  between overlapping frames for a range of overlaps between  
10  $S_s + k_{min}$  to  $S_s + k_{max}$  for only a fixed length overlap region less  
11 than an entire overlapping region ~~employs~~ employing the equation

$$R[k] = \sum_{i=\text{initial}_x}^{\text{final}_x} \text{sign}\{y[mS_s + i + k]\} \cdot \text{sign}\{x[mS_s + i]\}$$

13 where:  $x[i]$  is the analysis of the input signal for index value  $i$ ;  
 14  $y[i]$  is a synthesis signal for the index value  $i$ ;  
 15 selecting a value  $K$  yielding the greatest cross-correlation  
 16 value  $R[k]$ ;  
 17 synthesizing an output signal in a set of second equally  
 18 spaced, overlapping time windows having a second overlap amount  
 19 equal to  $S_s + K$ .

1 3. (Original) The method of claim 1, wherein:  
 2 said step of calculating the cross-correlation  $R[k]$  employs  
 3 only a center half of the overlap region for  $k = 0$ .

1 4. (Previously Presented) A digital audio apparatus  
 2 comprising:  
 3 a source of a digital audio signal;  
 4 a digital signal processor connected to said source of a  
 5 digital audio signal programmed to perform time scale modification  
 6 on the digital audio signal by  
 7 analyzing an input signal in a set of first equally  
 8 spaced, overlapping time windows having a first overlap  
 9 amount,  
 10 selecting a base overlap  $S_s$  for output synthesis  
 11 corresponding to a desired time scale modification,  
 12 calculating a cross-correlation  $R[k]$  for index value  $k$   
 13 between overlapping frames for a range of overlaps between  
 14  $S_s + k_{\min}$  to  $S_s + k_{\max}$  for only a fixed length overlap region  
 15 less than an entire overlapping region;  
 16 selecting a value  $K$  yielding the greatest  
 17 cross-correlation value  $R[k]$ ,

synthesizing an output signal in a set of second equally spaced, overlapping time windows having a second overlap amount equal to  $S_s + K$ ; and  
 an output device connected to the digital signal processor for outputting the time scale modified digital audio signal.

5. (Currently Amended) ~~The~~ A digital audio apparatus of ~~claim 4, wherein comprising:~~

a source of a digital audio signal;  
a digital signal processor connected to said source of a digital audio signal programmed to perform time scale modification on the digital audio signal by

analyzing an input signal in a set of first equally spaced, overlapping time windows having a first overlap amount,

selecting a base overlap  $S_s$  for output synthesis corresponding to a desired time scale modification,

~~said digital signal processor is programmed to calculate the~~ calculating a cross-correlation  $R[k]$  for index value  $k$  between overlapping frames for a range of overlaps between  $S_s + k_{min}$  to  $S_s + k_{max}$  for only a fixed length overlap region less than an entire overlapping region ~~employs employing the~~ equation

$$R[k] = \sum_{i=initial\_x}^{final\_x} sign\{y[mS_s + i + k]\} \cdot sign\{x[mS_s + i]\}$$

where:  $x[i]$  is the analysis of the input signal for index value  $i$ ;  $y[i]$  is a synthesis signal for the index value  $i$ ;

selecting a value  $K$  yielding the greatest cross-correlation value  $R[k]$ ,

23        synthesizing an output signal in a set of second equally  
24        spaced, overlapping time windows having a second overlap  
25        amount equal to  $S_s + K$ ; and  
26        an output device connected to the digital signal processor for  
27        outputting the time scale modified digital audio signal.

1        6. (Original) The digital audio apparatus of claim 4,  
2        wherein:  
3        said digital signal processor is programmed to calculate the  
4        cross-correlation  $R[k]$  employing only a center half of the overlap  
5        region for  $k = 0$ .